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Opening Statement for Personnel Recovery Conference,

"Future DoD Technology Requirements"

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I want to thank you for inviting me to serve on this panel today. I know that this is the fourth of these annual Conferences, and that the first three have been very successful in focusing attention on issues that need to be worked in order to improve our ability to bring isolated people home alive. I'm aware that after three years of assessment, the Joint Combat Search And Rescue Joint Test and Evaluation group, chartered by OSD, found that just over half of our Personnel Recovery problems are the result of C3I deficiencies. I also know that this finding agrees with the consensus of experience in the Personnel Recovery community. So, there is clearly much to do, and for years now we've been embarked on improving our C3I capabilities.

However, we're here today to discuss the future technological improvements that would make a difference in Recovery missions, and not to spend time going over past or current acquisitions. If there are things that should be done that are not being done, they need to be identified, proposed and supported as best we can.

Let's look for a moment at the context of our discussion. The business of C3I is information. Never has so much technology been in the hands of somany, never has so much information been available so widely, as we see around us today. The Department of Defense, with all its unique concerns, has begun exploiting this new technological potential to achieve Information Superiority. Information Superiority, for today perhaps most simply described as the right information, at the right place, at the right time, can determine the cost of victory. In Personnel Recovery missions, this can translate directly to people coming home alive; if new technology can help us accomplish that, it

needs to be fielded as rapidly as we can manage. The question becomes, how do we decide what needs to be done?

There are different frameworks that could be used to examine future technology requirements for Personnel Recovery. Enhancements could be viewed by acquisition category based on anticipated cost, or by basic function across the mission such as communications, or by the Service likely to lead their development. But for the present purpose, it seems most useful to consider future technology requirements as framed by the three primary users, namely: the isolated individual, the Recovery Center, and the Recovery Task Force. Each of these can clearly benefit from enhanced capabilities, and each has needs that may cross Service, function, and acquisition category boundaries. What would constitute Information Superiority for each of these three types of users, and what technologies would support those objectives?

For the Recovery Task Force, usually consisting of helicopters supported by ground suppression and interceptor aircraft, information needs include reliable, near real-time two-way communications wherever they have to operate; timely threat information and situational awareness; basically all the same things any strike force requires. There are also some information needs particular to Personnel Recovery. such as means of communicating with the isolated individual, situational awareness with regard to the individual, and ways to rapidly locate and identify that individual. even if no communications with him are possible.

Clearly, platforms likely to be involved in Recovery Task Force operations should be equipped with over-the-horizon, two-way secure communications systems. UHF SATCOM or even the Iridium system may be suitable, but if delectability of their transmissions is an issue, as it well may be in many situations, then other means must be found, such as the proposed Global Personnel Recovery System. Our recovery platforms should have the ability to receive and display threat and situational awareness information. At a minimum, this would mean equipping them with HAVE CSAR and either SADL or, preferably, Link-16; if these are

too costly, too large or otherwise unsuitable, then other means must be found. Further, our recovery platforms should have some means of communicating safely with the isolated individual, and should employ or have access to the output of specialized sensors which can locate and even identify that individual without any other communication. Sophisticated radar or MASINT techniques may need to be explored for this purpose. It should be noted that even where existing systems may serve some of these needs, it is many years before they're budgeted to be installed in platforms likely to be involved in Recovery missions. In the many instances where new systems may be the best answer, it will be the recently approved PRESS ACTD that begins exploring these possibilities, starting in the next few months.

For the Recovery Center (which may be called a Recovery Coordination Center if it has only Service responsibilities, or a Joint Search and Rescue Center if it has joint responsibilities), information needs are virtually the same as those of a Time Critical Targeting cell, namely immediate communications with the potentially involved operators, high-speed intelligence access, and robust information management tools. For Recovery Centers co-located with Air Operations Centers or similarly equipped facilities, these needs will be relatively easy to meet. For Recovery Centers that are not part of larger operations centers, careful planning for C3I support systems and connectivity are required. But whether or not co-located, there are information needs particular to Personnel Recovery, such as automated Recovery checklists and mission folders, rapid access to specialized databases such as Isolated Personnel Reports or Evasion Plans, and automated incident response logging to generate a valid record of Recovery activities as required by law.

Recovery Centers, whether or not part of larger operations centers, should be given adequate bandwidth, particularly on SIPRNET. They should have access to the COP at least, probably to TDDS, and should be considered for a GBS terminal. Every Recovery Center should be equipped with the new Personnel Recovery Mission Software, developed under the PRMS ACTD, which after operational testing,, was rated both "suitable and effective" in meeting the particular needs of

Recovery information management. This software package begins fielding within a few months, although it is a tremendous advance in capability, it can and should be developed further, so that we reap the full benefits of Recovery Center modernization.

For the isolated individual, usually thought of as a downed aircrew member despite the obvious fact that they may be an infantryman or a sailor, information needs are especially difficult to satisfy. This person, who may be designated as a survivor or as an evader, often will be in hiding or "on the run" and may well alternate between these two high-stress states. Their ability to assist in their own recovery, to remain free, or even to survive at all, can come down to whether or not they have two-way communications wherever they may be, whenever they need it – without giving themselves away to an enemy. These individuals should receive timely relevant threat information, so that they know when to hide, and what routes to avoid; this implies that we're tracking each of them more or less continuously, and can exchange messages at will. These individuals should also have "personal" situational awareness adequate to their local environment, such as: is anyone nearby, and if so are they, friend or foe? (Although it's been suggested that we should be able to remotely monitor their medical status, this seems to raise the risk of detection substantially, with little or no practical benefit in almost any situation.)

As a policy matter that affects these issues, we should re-evaluate who is considered at risk of capture in light of current conditions, to recognize that a soldier patrolling a frontier or a sailor fallen overboard in hostile waters, may be at risk. They may require additional training, and they may require new items of equipment to reduce those risks. But what technologies could meet the isolated individual's information needs? Global, continuously available, two-way, hard-to-detect, near-real-time communications, even of very limited bandwidth, is a challenge. User equipment that fits in your hand, that can be operated "on the run" with very minimal knowledge, and that does not increase the user's jeopardy, is a greater challenge. Providing the fine grain situational awareness that an individual on the ground probably needs is not easy, even if you are tracking that person and

can reach them at once, at anytime, which is again not-at-all easy. The current CSEL system, which will be discussed in more detail by another panel tomorrow, will do some of these things, but certainly not all of them: it is an ongoing acquisition, rather than the future technology that this panel is exploring. If an advanced capability such as the proposed Global Personnel Recovery System is validated by the new PRESS ACTD, then we should support the planning, and programming that will deliver that advanced capability over the next several years, to augment and enhance other equipment.

Allow me to step back for a moment. I've been addressing the informational capabilities needed to improve Personnel Recovery, but obviously there are needs for better technologies throughout Recovery missions. What can be done to Improve the survivability of Recovery Forces, especially of helicopters, in an area that may be "hot" with enemy forces? What equipment does the isolated individual need just to survive in different regions, or to evade successfully, or to otherwise assist with their own recovery? There hasn't been any consistent effort to do the R&D, let alone any commitment to field, the best systems and equipment that could be produced to help the survivor, the evader, the isolated individual in distress. With the startup of the new PRESS ACTD, this may begin to change. With establishment of a DoD Personnel Recovery, Battle Lab under the Joint Personnel Recovery Agency (a component of the Joint Forces Command), the whole R&D aspect may be underway, but this Battle Lab must be funded to actually do the whole job. And, the commitment to field will still need to be established by each Service, for all users.

To fully bring technology to bear on Personnel Recovery, we will find ourselves working with commercial innovators, and probably with nontraditional suppliers. We may work more closely with the developers in non-Defense agencies, and also with interagency bodies, such as the R&D Working Group (chaired by NASA) of the National Search And Rescue Committee (chaired by the Coast Guard). We may find that we coordinate more on these matters with allies, coalition partners, and even the international community since, by

definition, Personnel Recovery spans the spectrum, peacetime through major regional conflict - there may be Combat SAR in one theater, and civil SAR in another, and so on, simultaneously.

Organizations represented on this panel have roles to play in evolving the capabilities we need to meet the future technology requirements I've outlined, so that we become better at bringing people home alive. The clear role of C3I is to bring the benefits of Information Superiority to the Personnel Recovery mission.